



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/668,384

09/23/2003

Jeffrey M. Pfeiffer

DP-308980

2480

7590 09/27/2007
JIMMY L. FUNKE
DELPHI TECHNOLOGIES, INC.
P. O. Box 5052
Legal Staff - Mail Code: 480-410-202
Troy, MI 48007-5052

| |
|----------|
| EXAMINER |
|----------|

ESHETE, ZELALEM

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3748

| | |
|-----------|---------------|
| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

09/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/668,384

Applicant(s)

PFEIFFER ET AL.

Examiner

Zelalem Eshete

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7-9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Quinn, Jr. et al. (5,289,805).

Regarding claim 1: Quinn discloses a control method for an electrically activated mechanism that adjusts cam phase in an internal combustion engine (see figure 1e), comprising the steps of: measuring said cam phase and forming a closed-loop control signal for activating said mechanism based on a deviation of the measured cam phase from a requested cam phase, and one or more closed-loop gain terms (see numeral 208); determining a rate of response of cam phase adjustment in response to a requested change in cam phase; comparing said determined rate of response to one or more rate thresholds defining a nominal rate of response (in that, inherently, checking in each iteration if there is a need to compute the gain based on a change in operation conditions) and adaptively adjusting said closed-loop gain terms in a direction to increase a response rate of said mechanism if the determined rate of response is below said nominal rate of response (see numeral f2).

Regarding claim 2: Quinn discloses determining an estimate of an operating parameter of said mechanism based in part on a set of stored parameter values (see numeral f1); calibrating closed-loop gain terms as a function of said operating parameter, and retrieving calibrated closed-loop gain terms from a memory device based on said estimate (see figure 1e); and adaptively adjusting said stored parameter values in a direction to increase the retrieved closed-loop gain terms if the determined rate of response is below said nominal rate of response (see column 11, lines 5 to 20).

Regarding claim 3: Quinn discloses said operating parameter is an oil pressure supplied to said mechanism (see figure 1e).

Regarding claim 4: Quinn discloses said stored parameter values are adjusted by an amount based on a deviation of the determined rate of response from said nominal rate of response (see figure 1e; column 11, lines 5 to 20).

Regarding claim 5: Quinn discloses storing calibrated values of said closed-loop gain terms based on operating parameters of said engine and said mechanism; and adaptively adjusting the stored calibrated values in a direction to increase a response rate of said mechanism if the determined rate of response is below said nominal rate of response (see figure 1e; column 11, lines 5 to 20).

Regarding claim 6: Quinn discloses determining said rate of response of cam phase adjustment based on a time interval that starts when said measured cam phase begins to change toward said requested cam phase and that ends when said deviation of the measured cam phase from the requested cam phase falls below a threshold (see figure 1e; column 11, lines 5 to 20).

Allowable Subject Matter

3. Claims 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zelalem Eshete whose telephone number is (571) 272-4860. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3748

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Zelalem Eshete
Primary Examiner
Art Unit 3748

A handwritten signature in black ink, appearing to read 'Zelalem Eshete', is written over the printed name and title.